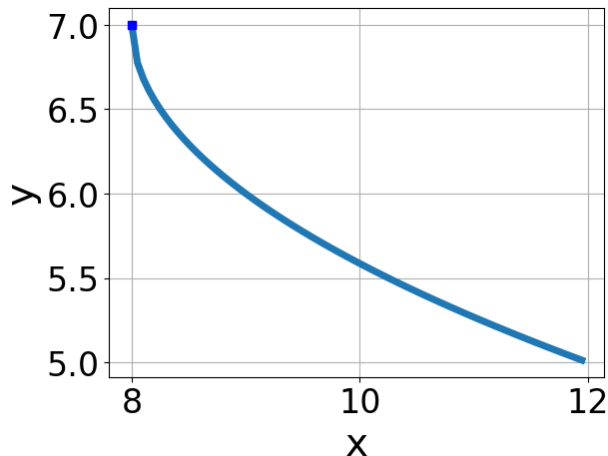1. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x-8} + 7$

B. $f(x) = -\sqrt[3]{x+8} + 7$

C. $f(x) = \sqrt[3]{x-8} + 7$

D. $f(x) = \sqrt[3]{x+8} + 7$

E. None of the above

2. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-49x^2 + 40} - \sqrt{-21x} = 0$$

A. $x \in [0.85, 1.23]$

B. $x_1 \in [-0.89, -0.53]$ and $x_2 \in [-0.86, 3.14]$

C. $x_1 \in [0.13, 1.01]$ and $x_2 \in [-0.86, 3.14]$

D. All solutions lead to invalid or complex values in the equation.
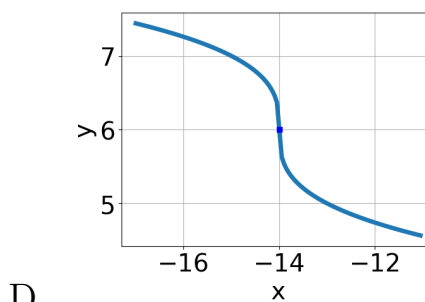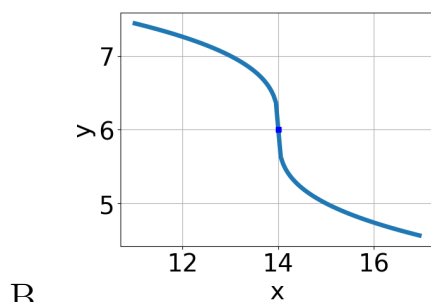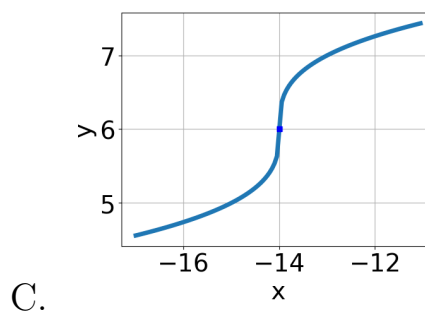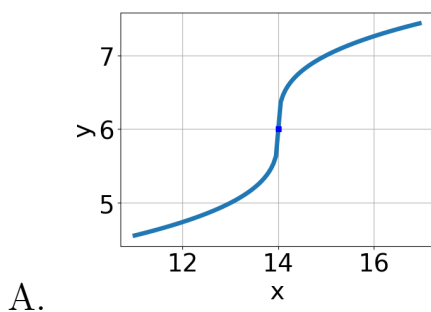
E. $x \in [-0.89, -0.53]$

3. What is the domain of the function below?

$$f(x) = \sqrt[7]{8x - 9}$$

A. $(-\infty, \infty)$

B. The domain is $(-\infty, a]$, where $a \in [0.82, 0.93]$

C. The domain is $[a, \infty)$, where $a \in [0.05, 0.96]$

D. The domain is $(-\infty, a]$, where $a \in [1.04, 1.86]$

E. The domain is $[a, \infty)$, where $a \in [1.03, 1.14]$

---

4. Choose the graph of the equation below.

$$f(x) = -\sqrt[3]{x - 14} + 6$$
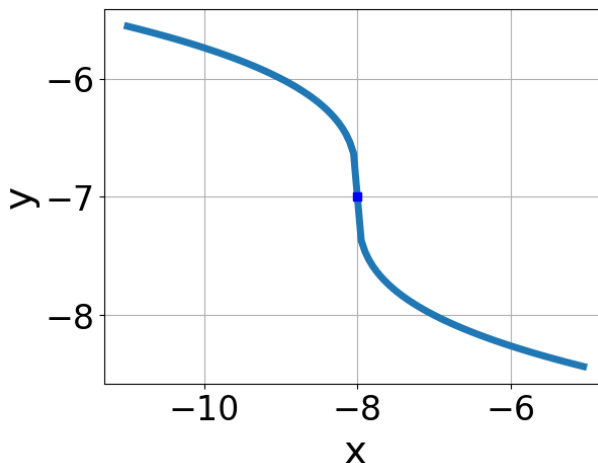

A.

C.

B.

D.

E. None of the above.

---

5. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-6x + 5} - \sqrt{-3x - 5} = 0$$

A. $x \in [2.7, 4.1]$

B. $x_1 \in [0.4, 1.5]$ and $x_2 \in [1.33, 5.33]$

C. $x \in [-0.6, 0.3]$

D. All solutions lead to invalid or complex values in the equation.

E. $x_1 \in [-3.3, -1.4]$ and $x_2 \in [-1.17, 2.83]$

---

6. Choose the equation of the function graphed below.

A. $f(x) = \sqrt{x - 8} - 7$

B. $f(x) = -\sqrt{x + 8} - 7$

C. $f(x) = \sqrt{x + 8} - 7$

D. $f(x) = -\sqrt{x - 8} - 7$

E. None of the above

---

7. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{8x - 7} - \sqrt{5x + 5} = 0$$

A. $x \in [0.4, 0.75]$

B. $x \in [4, 4.36]$

C. $x_1 \in [-1.21, -0.69]$ and $x_2 \in [-2.12, 1.88]$

D. $x_1 \in [0.83, 1.02]$ and $x_2 \in [3, 9]$

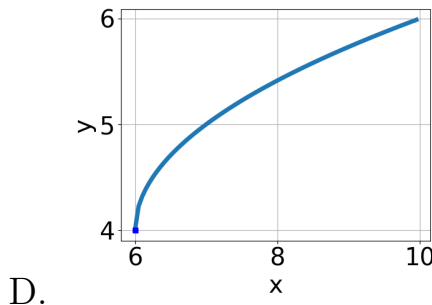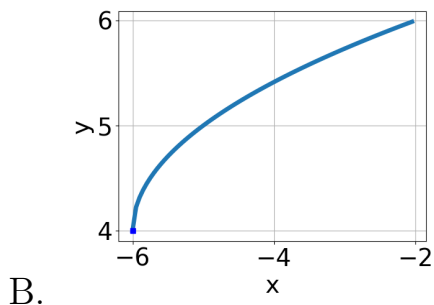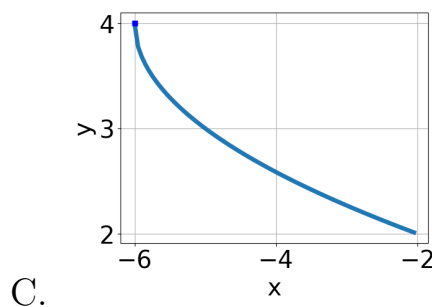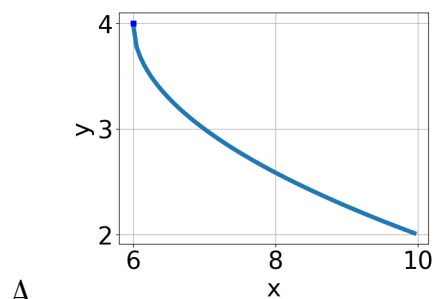E. All solutions lead to invalid or complex values in the equation.

---

8. What is the domain of the function below?

$$f(x) = \sqrt[5]{-5x - 9}$$

A. $(-\infty, \infty)$

B. The domain is $(-\infty, a]$, where $a \in [-1.9, -1.1]$

C. The domain is $(-\infty, a]$, where $a \in [-1.3, -0.3]$

D. The domain is $[a, \infty)$, where $a \in [-2.48, -0.56]$

E. The domain is $[a, \infty)$, where $a \in [-1.03, -0.07]$

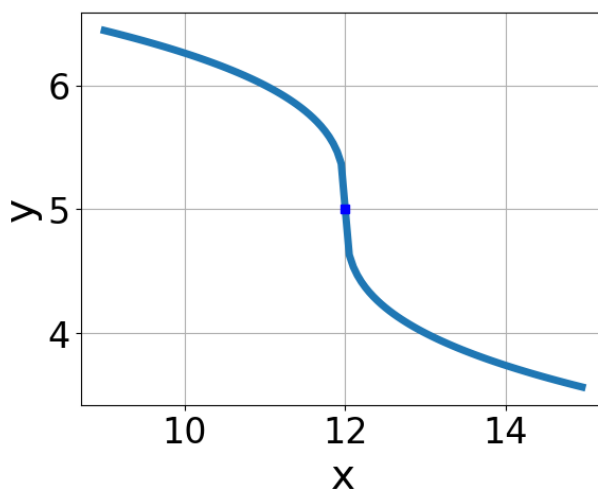9. Choose the graph of the equation below.

$$f(x) = -\sqrt{x - 6} + 4$$

A.

C.

B.

D.

E. None of the above.

---

10. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-35x^2 + 54} - \sqrt{33x} = 0$$

A. $x \in [-3.9, -1]$

B. $x_1 \in [-0.1, 1]$ and $x_2 \in [1.56, 2.76]$

C. All solutions lead to invalid or complex values in the equation.

D. $x_1 \in [-3.9, -1]$ and $x_2 \in [0.6, 1.05]$

E. $x \in [-0.1, 1]$

---

11. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt{x - 12} + 5$

B. $f(x) = \sqrt{x - 12} + 5$

C. $f(x) = -\sqrt{x + 12} + 5$

D. $f(x) = \sqrt{x + 12} + 5$

E. None of the above

---

12. Solve the radical equation below. Then, choose the interval(s) that the

solution(s) belongs to.

$$\sqrt{-14x^2 + 15} - \sqrt{-11x} = 0$$

A. $x \in [-0.94, -0.59]$

B. $x \in [1.22, 2.18]$

C. All solutions lead to invalid or complex values in the equation.

D. $x_1 \in [-0.94, -0.59]$ and $x_2 \in [0.5, 4.5]$
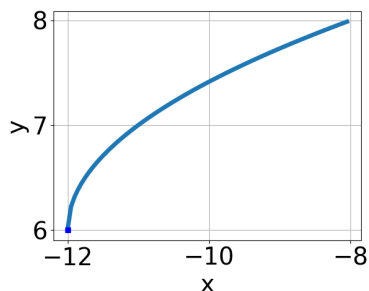
E. $x_1 \in [0.64, 0.89]$ and $x_2 \in [0.5, 4.5]$

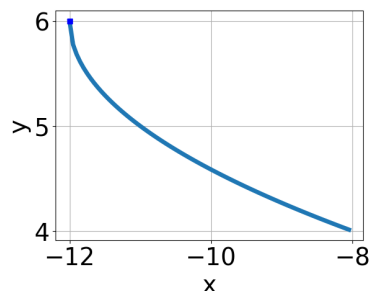13. What is the domain of the function below?

$$f(x) = \sqrt[4]{-4x + 6}$$

A. $[a, \infty)$, where $a \in [1.04, 1.63]$

B. $(-\infty, a]$, where $a \in [0.13, 0.89]$

C. $(-\infty, \infty)$

D. $(-\infty, a]$, where $a \in [1.08, 2.35]$

E. $[a, \infty)$, where $a \in [-0.35, 1.23]$

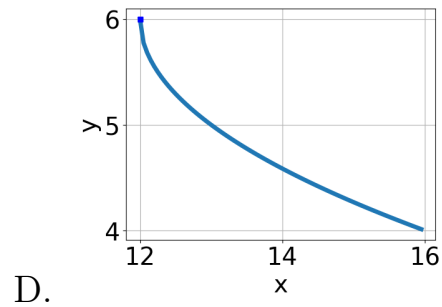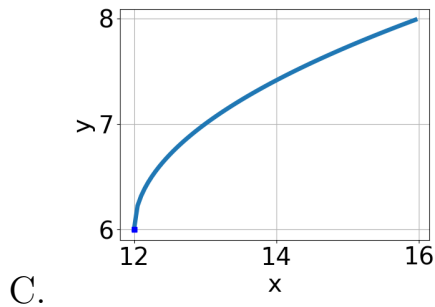
14. Choose the graph of the equation below.

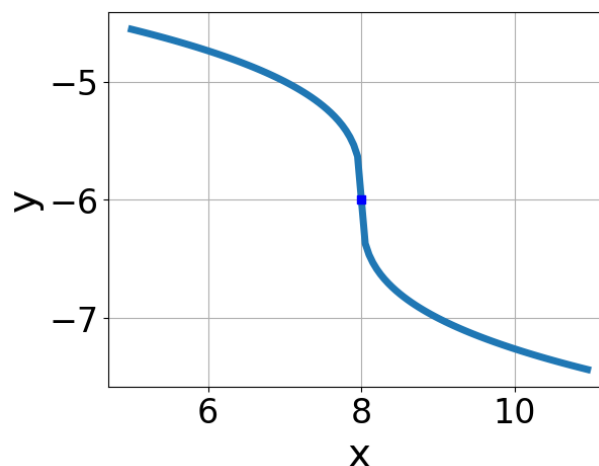$$f(x) = \sqrt{x + 12} + 6$$

A.

B.

C.

D.

E. None of the above.

15. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-6x - 4} - \sqrt{-8x + 4} = 0$$

A. $x_1 \in [-0.97, -0.43]$ and $x_2 \in [-0.5, 1.5]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-0.5, 0.24]$

D. $x_1 \in [-0.97, -0.43]$ and $x_2 \in [1, 10]$

E. $x \in [2.34, 4.82]$

16. Choose the equation of the function graphed below.

A. $f(x) = \sqrt[3]{x - 8} - 6$

B. $f(x) = \sqrt[3]{x+8} - 6$

C. $f(x) = -\sqrt[3]{x+8} - 6$

D. $f(x) = -\sqrt[3]{x-8} - 6$

E. None of the above

17. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-9x+6} - \sqrt{-2x+8} = 0$$

A. All solutions lead to invalid or complex values in the equation.

B. $x_1 \in [-1.48, -0.24]$ and $x_2 \in [-2.33, 3.67]$

C. $x_1 \in [0.49, 1.27]$ and $x_2 \in [2, 5]$
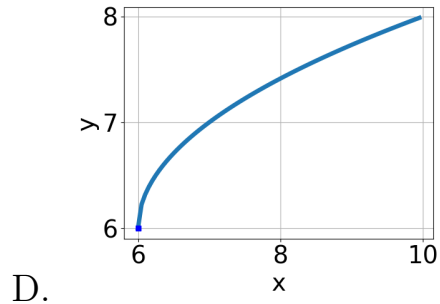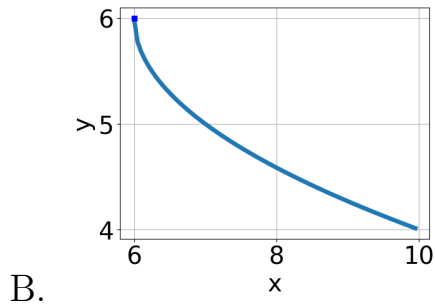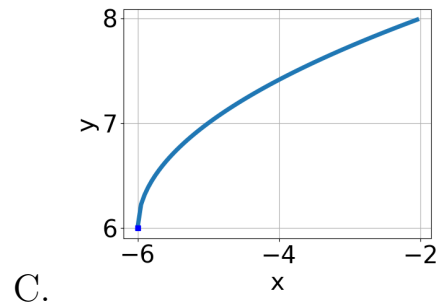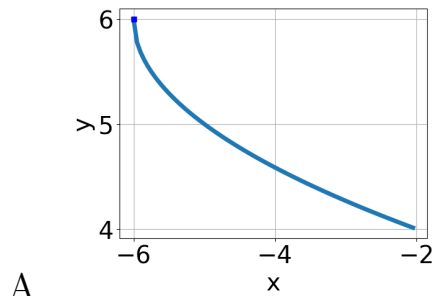
D. $x \in [-1.48, -0.24]$

E. $x \in [1.6, 2.51]$

18. What is the domain of the function below?

$$f(x) = \sqrt[7]{7x-4}$$

A. The domain is $[a, \infty)$, where $a \in [-0.24, 1.15]$

B. The domain is $(-\infty, a]$, where $a \in [1.1, 2.2]$

C. The domain is $[a, \infty)$, where $a \in [0.88, 2.58]$

D. $(-\infty, \infty)$

E. The domain is $(-\infty, a]$, where $a \in [-0.2, 1.7]$

19. Choose the graph of the equation below.

$$f(x) = -\sqrt{x+6} + 6$$
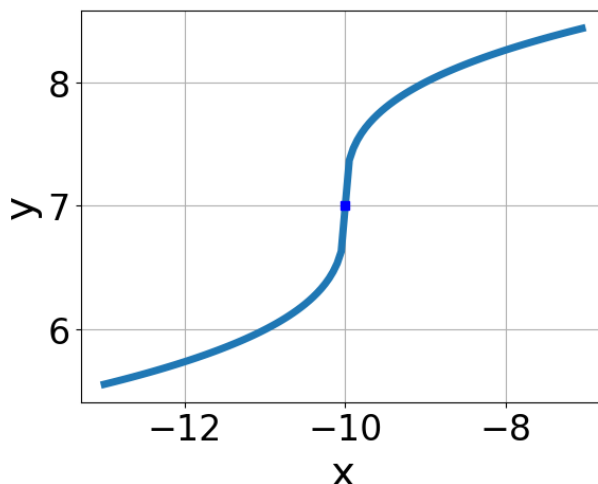
A.

C.

B.

D.

E. None of the above.

20. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{16x^2 + 49} - \sqrt{-70x} = 0$$

A. $x_1 \in [-4.5, -2.6]$ and $x_2 \in [-2.88, 1.12]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-4.5, -2.6]$

D. $x_1 \in [0, 4.5]$ and $x_2 \in [3.5, 6.5]$

E. $x \in [-1.7, 0.8]$

21. Choose the equation of the function graphed below.

A. $f(x) = -\sqrt[3]{x - 10} + 7$

B. $f(x) = \sqrt[3]{x - 10} + 7$

C. $f(x) = \sqrt[3]{x + 10} + 7$

D. $f(x) = -\sqrt[3]{x + 10} + 7$

E. None of the above

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22. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{-20x^2 - 24} - \sqrt{47x} = 0$$

A. $x_1 \in [0.24, 2.82]$ and $x_2 \in [-0.2, 1.5]$

B. All solutions lead to invalid or complex values in the equation.

C. $x \in [-2.16, -1.15]$

D. $x \in [-1.47, 0.11]$

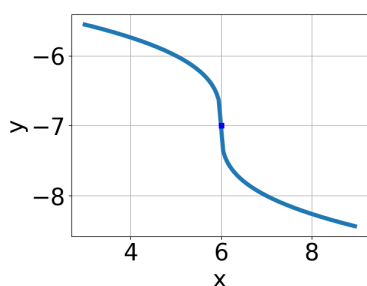E. $x_1 \in [-2.16, -1.15]$ and $x_2 \in [-2.9, 0.3]$

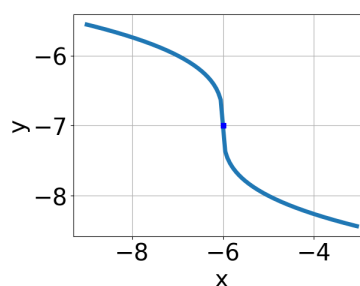23. What is the domain of the function below?

$$f(x) = \sqrt[4]{-7x - 4}$$

A. $(-\infty, a]$, where $a \in [-1.5, 4.7]$

B. $[a, \infty)$, where $a \in [-1, 1.3]$

C. $(-\infty, \infty)$

D. $[a, \infty)$, where $a \in [-3.9, -1]$

E. $(-\infty, a]$, where $a \in [-1.9, -1.3]$
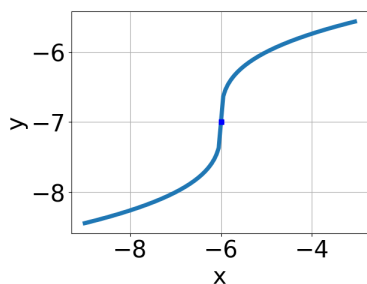
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24. Choose the graph of the equation below.

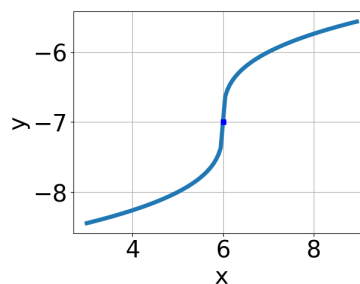$$f(x) = \sqrt[3]{x - 6} - 7$$

A.

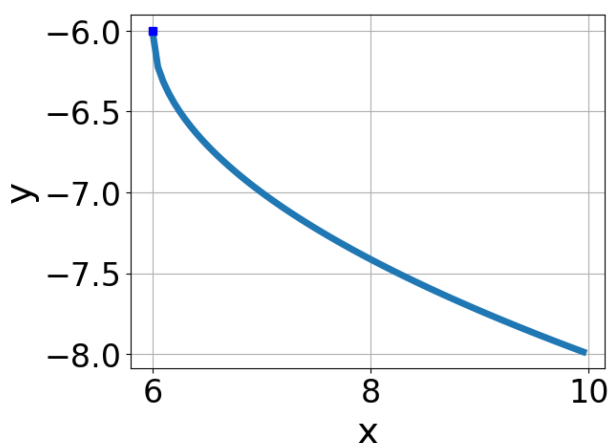C.

B.

D.

E. None of the above.

---

25. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{9x - 3} - \sqrt{-2x + 7} = 0$$

A. $x_1 \in [-0.07, 0.35]$ and $x_2 \in [3.5, 4.5]$

B. $x_1 \in [-0.07, 0.35]$ and $x_2 \in [-2.09, 1.91]$

C. $x \in [0.52, 1.09]$

D. All solutions lead to invalid or complex values in the equation.

E. $x \in [-0.5, -0.15]$

---

26. Choose the equation of the function graphed below.

A. $f(x) = \sqrt[3]{x+6} - 6$

B. $f(x) = \sqrt[3]{x-6} - 6$

C. $f(x) = -\sqrt[3]{x+6} - 6$

D. $f(x) = -\sqrt[3]{x-6} - 6$

E. None of the above

---

27. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\sqrt{9x+8} - \sqrt{6x+6} = 0$$

A. $x_1 \in [-1.1, -1]$ and $x_2 \in [-1.46, -0.82]$

B. $x \in [-4.88, -4.46]$

C. $x_1 \in [-0.89, -0.83]$ and $x_2 \in [-0.73, -0.45]$

D. All solutions lead to invalid or complex values in the equation.
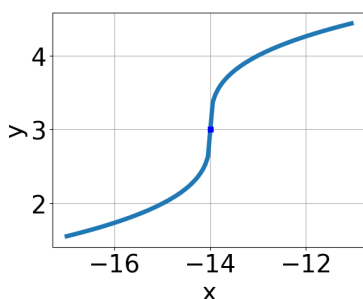
E. $x \in [-0.77, -0.5]$

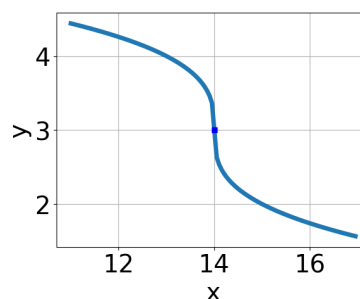28. What is the domain of the function below?
$$f(x) = \sqrt[4]{-6x - 9}$$

A. $[a, \infty)$, where $a \in [-0.8, 1.4]$

B. $(-\infty, a]$, where $a \in [-2.8, -1.14]$

C. $[a, \infty)$, where $a \in [-2.7, -0.7]$

D. $(-\infty, a]$, where $a \in [-1.36, 0.56]$

E. $(-\infty, \infty)$

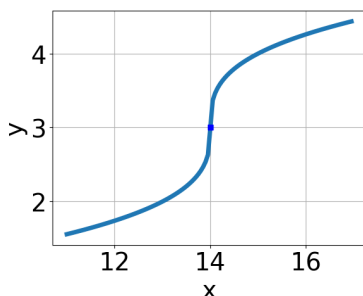29. Choose the graph of the equation below.
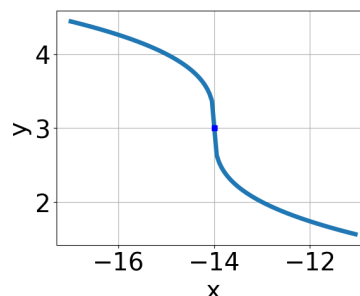$$f(x) = -\sqrt[3]{x + 14} + 3$$

A.

C.

B.

D.

E. None of the above.

30. Solve the radical equation below. Then, choose the interval(s) that the solution(s) belongs to.
$$\sqrt{16x^2 - 18} - \sqrt{-12x} = 0$$

A. $x \in [-2.2, -0.4]$

B. All solutions lead to invalid or complex values in the equation.

C. $x_1 \in [0.5, 1.2]$ and $x_2 \in [1.17, 1.59]$

D. $x \in [0.5, 1.2]$

E. $x_1 \in [-2.2, -0.4]$ and $x_2 \in [-0.12, 1.42]$